APPENDIX A

OIPE IAP97 SEP 10 2007 PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In The Matter of United States Patent Application:

Serial No.	:	**10/727,485**
Applicant	:	**Karel Hajmrle et al.**
Filed	:	**December 5, 2003**
Group Art Unit	:	**1714**
Confirmation No.	:	**2078**
Examiner	:	**Lang, Amy T**
Title	:	**Method for Producing Composite Material for Coating Applications**
Our File	:	**T8467813US**
Date	:	**September 7, 2007**

The Honorable Commissioner of Patents and Trademarks
Washington, D.C.
United States of America 20231

Declaration under 37 CFR 1.132

1. I, William Walkhouse, am a co-inventor of the subject matter which is claimed and for which a patent is sought on the invention in the above-mentioned United States patent application. I have worked in the metallurgical industry since 1987, primarily as a research technologist. A copy of my résumé is attached as Exhibit "A".

2. On May 8, 2007, a final office action was mailed by the United States Patent & Trademarks Office with respect to the above-mentioned United States patent application.

3. Amongst other things, the final office action rejects independent claim 44 under 35 U.S.C. 103(a).

4. Claim 44 defines the following invention:

A method for producing solid lubricant agglomerates comprising:

admixing a plurality of components comprising a particulate solid lubricant, an inorganic binder, and a liquid to produce a mixture having about 5 to 60 weight % solids based on the total weight of the mixture, wherein the ratio of the weight of

the solid lubricant being admixed to the weight of the binder being admixed is from about 19:1 to about 1:19;

drying the mixture to produce dry agglomerates;

classifying the dry agglomerates by size, or milling and classifying the dry agglomerates by size, to obtain a desired particle size cut; and

causing the binder in the desired particle size cut to become non-dispersible in the liquid.

5. The Examiner rejects claim 44 on two separate bases. Each of these bases is explained at, respectively, paragraphs 7 and 10 of the final office action. I will address each of these bases separately, in the order that the rejections appear in the final office action.

6. In support of the rejection of claim 44 at paragraph 7, the Examiner cites U.S. Patent No. 3,051,586 issued to Heath (hereinafter, US '586), U.S. Patent No. 5,122,182 issued to Dorfman (hereinafter, US '182), and U.S. Patent No. 6,432,886 issued to Reidmeyer (hereinafter, US '886).

7. I have reviewed each of these references, and none of these references discloses a method by which a composition is made, and which includes the step of rendering a binder to become non-dispersible in the original liquid. Moreover, there is nothing inherent within the methods used to make the compositions described in these references which would render the respective binders to become non-dispersible.

8. In support of the rejection of claim 44 at paragraph 10, the Examiner cites U.S. Patent No. 4,039,337 issued to Brown (hereinafter, US '337) and U.S. Patent No. 5,506,055 issued to Dorfman (hereinafter, US '055).

9. I have reviewed each of these references, and none of these references discloses a method by which a composition is made, and which includes the step of rendering a binder to become non-dispersible in the original liquid. Moreover,

there is nothing inherent within the methods used to make the compositions described in these references which would render the respective binders to become non-dispersible.

10. The final office action also rejects independent claim 57 under 35 U.S.C. 103(a).

11. Claim 57 defines the following invention:

A method for producing solid lubricant agglomerates comprising:

admixing a plurality of components comprising a particulate solid lubricant, an inorganic binder, and a liquid to produce a mixture having about 5 to 60 weight % solids based on the total weight of the mixture, wherein the ratio of the weight of the solid lubricant being admixed to the weight of the binder being admixed is from about 19:1 to about 1:19; and

drying the mixture to produce dry agglomerates.

wherein the binder is hydrous aluminium silicate that is configured to be stabilized at temperatures above 850°C in the dry agglomerates.

12. The Examiner rejects claim 57 on two separate bases. Each of these bases is explained at, respectively, paragraphs 9 and 10 of the final office action. I will address each of these bases separately, in the order that the rejections appear in the final office action.

13. In support of the rejection of claim 57 at paragraph 9, the Examiner cites US '586, US '182, US' 886, US '055, and U.S. Patent No. 5,468,401 issued to Lum (hereinafter, US '401). The Examiner cites US '401 for purpose of illustrating the use of bentonite as a binder.

14. I have reviewed US' 401, and confirm that the US '401 binder does not use bentonite in the concentration recited in claim 57. The binder disclosed in US '401 comprises a plurality of components. Although one of those components of the US '401 binder may be bentonite, use of bentonite within the

binder system of US '401 is merely as a compressibility enhancer (see column 20, line 5), and that the compressibility enhancer is only a small part of the binder system. Certainly, US '401 does not disclose the use of a binder system, wherein the binder is hydrous aluminium silicate, in the proportions recited in claim 57.

15. In support of the rejection of claim 57 at paragraph 10, the Examiner cites U.S. Patent No. 4,039,337 issued to Brown (hereinafter US '337) and US '055. The Examiner appears to cite US '337 for purpose of illustrating the disclosure of a composition including a silicate binder.

16. I have reviewed US '337, and would like to point out that a person of ordinary skill in the art, being aware of US '337, would not consider using hydrogen aluminium silicate as a binder during the making of a solid lubricant agglomerate. This is because of the pronounced differences between hydrous aluminium silicate and the silicates of US '337, and how these differences affect the manner by which each of them coat components of its respective solid lubricant agglomerate. The mechanism by which hydrous aluminum silicate coats components of the solid lubricant agglomerate (being made by the method as claimed in claim 57), in comparison to the mechanism by which the silicates of US '337 coats components of the solid lubricant agglomerate, is very different. Unlike the water-soluble silicates described in US '337, hydrous aluminium silicate does not actually dissolve into solution as ions. Rather, hydrous aluminium silicate disperses into platelets which are about 300 to 500 microns in diameter, and only 3 to 5 microns thick. The hydrous aluminium platelets develop concentrated areas of cations and anions. Because of this, individual platelets have a tendency to stick together (like overlapping playing cards) and form a very strong film on the available surface of the agglomerating components as the water is driven off. In contrast, the silicates described in US '337 dissolve in water and coat the particles in US '337 by a wetting action.

17. Additionally, unlike the silicates described in US '337, the crystallographic structure of the hydrous aluminium silicate binder (of the solid lubricant

agglomerate made in accordance with the method as claimed in claim 57) can be modified with a post-heat treatment such that the hydrous aluminium silicate binder becomes "stabilized" and cannot be re-dispersed as platelets. In contrast, the silicate binders discussed in US '337 would remain re-dissolvable. Being able to stabilize a binder, such as hydrous aluminium silicate binder (ie. render the hydrous aluminium silicate non-dispersible), is important for subsequent hydrometallurgical coating operations.

18. I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on the 14 day of August, 2007.

William Walkhouse

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EXHIBIT "A"

Bill Walkhouse

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Background Summary

Senior Research Technologist with extensive experience in project management, supervision, experiment design and execution, interpretation of results, report writing, pilot plant operation, equipment maintenance, instrumentation set-up, and safety coordination.

Employment

Senior Research Technologist — **December 1998 to Present**
Sulzer Metco (Canada) Inc.

- Manage R&D projects including budgeting, scheduling, patent strategy, acquiring resources, supervision, and reporting.
- Provide technical support resources to production facility including troubleshooting, pilot plant design and operation, and process optimization.
- Provide pilot scale manufacturing resources to support other research projects and joint ventures.
- Act as Safety Coordinator and SAP Implementation Lead for R&D.
- Provide mentoring and training for R&D personnel.

Achievements:

- Scaled up four products from concept to full production capacity.
- Identified synergy between business units which realized annual savings of $50k.
- Numerous examples of troubleshooting solutions for plant upset resulting in improvements in product quality and final recovery.
- Implementation of an early warning system significantly reducing losses.

Research Technologist — **December 1995 – Dec. 1998**
Umicore Canada (Inc).

- Team leader for R&D projects, developing specialty materials for the electronics and hard metals industry.
- Designed complex experiments, interpreted results and wrote reports.
- Operated pilot plants.
- Sourced equipment for handing ultra-fine metallic powders.

QC Analyst — **September 1993 – Dec. 1995**
The Westaim Corporation

- Performed physical metallurgy test work on advanced materials.
- Maintained Statistical Process Control using standardized test methods.
- Maintained test instrumentation and equipment.

Research Technologist — **October 1989 – September 1993**
The Westaim Corporation

- Operated and maintained a small production scale inert gas atomizer to research fine metallic powder production.
- Operated a Quality Control thermal spray booth including equipment maintenance.

QC Technologist — **June 1987 – October 1989**
Sherritt Gordon Mines

- Performed quality control tests on coinage products including Rockwell hardness, visual inspection, weights and measures.
- Performed statistical analysis and certified material for sale.

Education

Materials Engineering Technology — Graduated 1987
Northern Alberta Institute of Technology — Honors Diploma

- Louise McKinney Scholarship for Exceptional Academic Achievement
- Certificate of Merit for Scholastic Achievement

Personal

- Member of ASET since 1998, volunteering in the Edmonton Chapter Executive from 1999 to the present.
- Active in my community as a soccer coach and field coordinator.
- Lifelong fitness and sports enthusiast.

References Available on Request